

Notice of Allowability

Application No.

10/608,032

Examiner

Gordon J. Stock

Applicant(s)

TSUKAKOSHI, TOSHIO

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment received 3/14/06.
2. ☒ The allowed claim(s) is/are 1-19, 64-66, 73-89, 94-105, 110, 112-114, 116-122, 124-126, 128-135 and 139-145.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Gregory J. Tolley, Jr.
Supervisory Patent Examiner
2/27/06

DETAILED ACTION

1. The Amendment received on March 14, 2006 has been entered into the record.

Allowable Subject Matter

2. **Claims 1-19, 64-66, 73-89, 94-105, 110, 112-114, 116-122, 124-126, 128-135, and 139-145** are allowed.

The following is an examiner's statement of reasons for allowance:

As to **claim 1**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method of adjusting an image forming state of a pattern image projected onto an object via a projection optical system the particular optimizing and calculating step, in combination with the rest of the limitations of **claims 1-19 and 139**.

As to **claim 64**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an image forming characteristics adjusting method the particular adjusting step, in combination with the rest of the limitations of **claims 64-66 and 94-104**.

As to **claim 73**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an exposure apparatus the particular computing unit, in combination with the rest of the limitations of **claims 73-81**.

As to **claim 82**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an exposure apparatus the particular adjusting unit and storage unit, in combination with the rest of the limitations of **claims 82-83**.

As to **claim 84**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a device manufacturing method an image forming characteristic of said projection optical system is adjusted based on data of a relation between an adjustment amount

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of an optical element of said projection optical system and a change in coefficients of each term in a Zernike polynomial and information related to wavefront aberration of said projection optical system, in combination with the rest of the limitations of **claim 84**.

As to **claim 85**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an exposure apparatus the particular computing unit, in combination with the rest of the limitations of **claims 85-89**.

As to **claim 105**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an exposure method the particular calculating step, in combination with the rest of the limitations of **claim 105**.

As to **claim 110**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an exposure method the particular calculating step, in combination with the rest of the limitations of **claims 110, 112-113, and 140**.

As to **claim 114**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an exposure method the particular calculating and optimizing steps, in combination with the rest of the limitations of **claims 114, 116-121, and 141**.

As to **claim 122**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an exposure apparatus the particular computing unit, in combination with the rest of the limitations of **claims 122, 124-126, and 128-135**.

As to **claim 142**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a computer readable medium the particular calculating procedure, in combination with the rest of the limitations of **claim 142**.

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As to **claim 143**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a computer readable medium the particular calculating procedure and adjusting procedure, in combination with the rest of the limitations of **claim 143**.

As to **claim 144**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a computer readable medium the particular adjusting procedure, in combination with the rest of the limitations of **claim 144**.

As to **claim 145**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a computer readable medium the particular calculating procedure, in combination with the rest of the limitations of **claim 145**.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

3. Applicant's arguments, see Remarks, filed March 14, 2006, with respect to the rejection of claims under 35 U.S.C. 102(e) with **Hamatani et al. (6,961,115)** in the previous action have been fully considered and are persuasive. The previous rejection of the claims under 35 U.S.C. 102(e) has been withdrawn. Due to the amendment of **claims 142-145**, the previous rejection of the claims under 35 U.S.C. 101 has been withdrawn.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: U.S. Patent 6,960,415 to Shiode

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U.S. Patent 6,937,345 to Kuramoto

U.S. Patent 6,975,387 to Mizuno

U.S. Patent 6,887,625 to Baselmans et al.

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (571) 273-8300

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

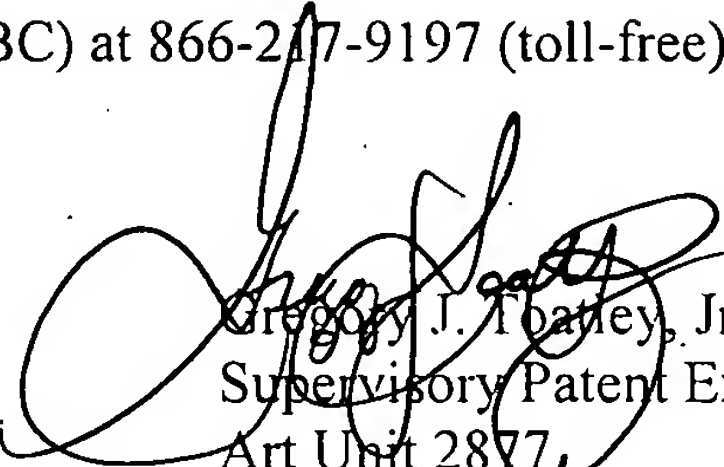
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gs

March 24, 2006


Gregory J. Tooley, Jr.
Supervisory Patent Examiner
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27/MAR/06